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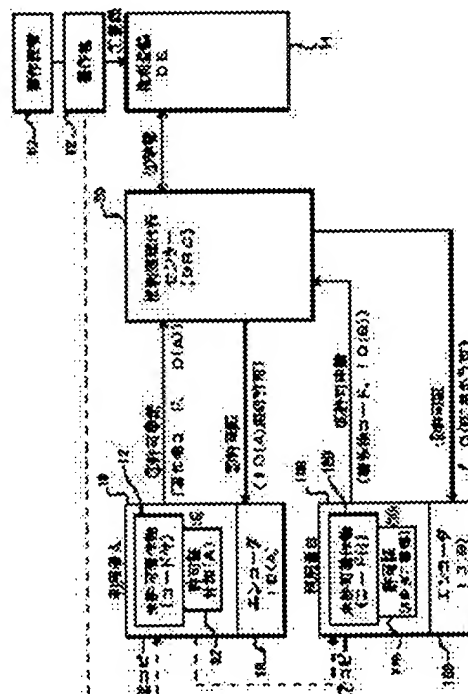
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(54) METHOD AND SYSTEM FOR MONITORING USE OF DIGITAL COPYRIGHTED WORK, DIGITAL COPYRIGHTED WORK RECORDING DEVICE, AND DIGITAL COPYRIGHTED WORK REPRODUCING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To properly and smoothly distribute digital copyrighted work by preventing a digital copyrighted work from illegally being used, e.g. copied without permission, monitoring whether it is used with regular permission, and demanding the payment of the charge for the use of the digital copyrighted work.

SOLUTION: A use permit is issued according to an application for the use of the digital copyrighted work and added to the digital copyrighted work by digital watermarking. Here, an identification code for a use device that a user uses is incorporated in the permit to monitor whether the use of the distributed digital copyrighted work is given proper permission. The issue



of the permit can be conditioned by the payment of the use charge.

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CLAIMS

[Claim(s)]

[Claim 1] (a) Register the digital work into the database for access registration by identification code.;
 (b) An access processing vicarious execution pin center, large is a reception opium poppy about the application of utilization consent by receiving the identification code of the utilization equipment which the identification code and the user of a digital work whom a user uses use.;
 (c) An access processing vicarious execution pin center, large collates with said database for access registration the identification code of the digital work which utilization equipment uses based on the application of this utilization consent, and the identification code of utilization equipment, and when carrying out utilization authorization, it publishes the license containing the identification code of this utilization equipment.;
 (d) Utilization equipment adds this license to a digital work by digital watermarking, and uses a digital work with this license.;

The utilization monitor approach of the digital work characterized by having the process of the above (a) - (d).

[Claim 2] An access processing vicarious execution pin center, large is the utilization monitor approach of the digital work of claim 1 which publishes a license after checking delivery of the utilization tariff from utilization equipment when the utilization authorization information over this utilization equipment is not registered to the identification code of a digital work, as a result of collating at the process (c) of claim 1.

[Claim 3] An access processing vicarious execution pin center, large is the utilization monitor approach of the digital work of claim 2 which sends out warning a condition [the utilization authorization information over utilization equipment not being registered to the identification code of a digital work, as a result of collating at the process (c) of claim 1, and delivery of a utilization tariff not being carried out from utilization equipment].

[Claim 4] Addition of the license to a digital work is the utilization monitor approach of one digital work of claims 1-3 which retroact and add in order two or more licenses by which sequential handing out is carried out to the same digital work possible [decode].

[Claim 5] Addition of the license to a digital work is the utilization monitor approach of one digital work of claims 1-3 rewritten one by one with the license by which sequential handing out is carried out to the same digital work.

[Claim 6] It is prepared in the access registration database and; user's digital work record regenerative apparatus which register the digital work record regenerative apparatus which a digital work and its user use by identification code. The utilization consent application form section which sends out the identification code of the digital work used with said digital work record regenerative apparatus, and the identification code of said digital work record regenerative apparatus, The license adjunct which adds the license which contains the identification code of said digital work record regenerative apparatus in a digital work based on the license handing out command which the after-mentioned access processing vicarious execution pin center, large outputs by digital watermarking, The user side encoder which it has;

With the application reception server which collates with said access registration database the identification code of the digital work used with said digital work record regenerative apparatus based on the identification code which said utilization consent application form section sends out, and said digital work record regenerative apparatus Utilization monitoring system of the digital work characterized by having the access processing vicarious execution pin center,large which has the license issuance server which delivers the license which contains the identification code of this digital work record regenerative apparatus in carrying out utilization consent to said license adjunct, and;.

[Claim 7] In claim 6, it has an accounting system further. This accounting system As a result of said application reception server's collating with said access registration database the identification code of the digital work record regenerative apparatus which a digital work and a user use, the identification code of a digital work is received. Utilization monitoring system of the digital work characterized by ordering it handing out of a license to said license issuance server a condition [the utilization tariff having been paid when the identification code of this digital work record regenerative apparatus was not registered].

[Claim 8] With the payment processing section prepared in the encoder, and the accounting server which prepared in the access processing vicarious execution pin center,large It has an accounting database. As a result of said application reception server's collating with said access registration database the identification code of the digital work record regenerative apparatus which a digital work and a user use, the identification code of a digital work is received. When the identification code of this digital work record regenerative apparatus is not registered, this application demand command is outputted to said payment processing section. This payment processing section performs payment processing of a utilization tariff through said accounting system while making this application to said accounting server based on this the application demand command of this. While outputting a license handing out command to a license issuance server a condition [completion of this application and payment processing of a utilization tariff], said accounting server Utilization monitoring system of the digital work of claim 7 which stores the processing result in said access registration database, and stores accounting information in said accounting database.

[Claim 9] A user's digital work record regenerative apparatus is the utilization monitoring system of the claim 6 or the digital work of 7 or 8 with which it is formed by computer and two or more users' computer and the access processing vicarious execution pin center,large are combined by the information network.

[Claim 10] An information network is the utilization monitoring system of the digital work of claim 9 which is the Internet.

[Claim 11] Two or more preparations and these access processing vicarious execution pin center,larges are the utilization monitoring system of the digital work to which the access processing vicarious execution pin center,large of each other is connected in the information network in the utilization monitoring system of one digital work of claims 6-10.

[Claim 12] Every one access processing center is the utilization monitoring system of the digital work of claim 11 arranged for every area.

[Claim 13] Two or more access processing vicarious execution pin center,larges are the utilization monitoring system of the digital work of claim 11 by which the hierarchy division is carried out in two or more local access processing vicarious execution pin center,larges arranged for every area with one generalization access processing vicarious execution pin center,large, and the end access processing vicarious execution pin center,large managed in the every place region access processing vicarious execution pin center,large, respectively.

[Claim 14] A local access processing vicarious execution pin center,large is the utilization monitoring system of the digital work of claim 13 arranged for every country.

[Claim 15] Distribution of the digital work in an area which is different while an every place region access processing vicarious execution pin center,large is equipped with an accounting system, respectively and accounting between areas is performed in the local access processing vicarious execution pin center,large within every place, and accounting are the utilization monitoring system of

the digital work of claims 13 or 14 which were made to perform in the generalization access processing vicarious execution pin center,large.

[Claim 16] The digital work recording device characterized by having the user side encoder which is the digital work recording device used for the utilization monitoring system of one digital work of claims 6-15, and has the utilization consent application form section and a license adjunct, and the Records Department which records the digital work which attached the license by digital watermarking on a disengageable storage.

[Claim 17] The digital work regenerative apparatus characterized by to have the protector which forbids the output of the digital work which read in said playback section when the license given to the digital work which remembers beforehand the identification code of said digital work recording apparatus to be the playback section which is the digital work regenerative apparatus used with the digital work recording apparatus of claim 16, and reads the content recorded on the storage, and was read in said playback section was the identification code and the inequality of said digital work recording apparatus.

[Translation done.]

JAPANESE [JP,2000-163488,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the utilization monitor approach, the utilization monitoring system, and the digital work recording apparatus and the digital work regenerative apparatus of a digital work for preventing that unsuitable utilization and enabling a proper and smooth negotiation, when digitized digital works, such as an image and music, are used by the duplicate etc.

[Translation done.]

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PRIOR ART

[Description of the Prior Art] With progress of a digital-signal-processing technique and computer technology, by low cost, various works are digitized simple and have come to be used widely in recent years. For example, the user (user) of non-property a large number, such as ordinary computer users (user) and a small-scale corporation, can make an original copy digital work now himself. Moreover, publication software, such as image software, such as image software, such as music titles, such as a vast quantity of commercial records which an individual, a body, etc. own, and a film, fine arts and a handicraft, and a building, and books, etc. is digitized, and it came to be used.

[0003] such a digitized work (it is called a digital work, a digital content, etc.) can be easily used using a personal computer (PC -- or it is only called a computer etc.) or a digital instrument. By using especially information networks, such as the Internet, it becomes possible to distribute very individually [these digital works] easily also for a nonprofit user. Furthermore, it also enables him for a user to reproduce this digital work very easily (copy), to change it again, and to use it.

[0004] On the other hand in the conventional Copyright Act, it was what takes care of a copyright person, a maker, a negotiation entrepreneur, etc. under the premise that software quality deteriorates by the duplicate of a work (for example, image quality will worsen by the duplicate if it is an image). That is, it was that to which a rightful claimant (an author or inheritance person of copyright) makes a maker reproduce using the right of reproduction copyright, and makes it sell to, industries and negotiation systems, such as a record, and video, publication, are raised, and are developed into, and these records, video, and the publication itself circulate even the last user through this negotiation system.

[0005] Moreover, also in the distribution industry of a digital work, the rightful claimant of copyright has granted the access which changes digital package media (duplicate) with CD-ROM, DVD (Digital Video Disc, a digital videodisc, or Digital Versatile Disc), etc., and the access which accepts the duplicate on a network conventionally to an entrepreneur's server to distribute. For this reason, the user (user) of a digital work accessed the server which is accumulating the master of a digital content, and had received the electronic digital duplicate object.

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EFFECT OF THE INVENTION

[Effect of the Invention] As mentioned above, an access processing vicarious execution pin center, large (DRC) receives the handing out application of a utilization license, and invention of claim 1 publishes a license, and since it adds the license containing identification code ID of the utilization equipment which this user uses to a digital work by digital watermarking, it can supervise whether it is proper utilization by investigating the existence of the license of the used digital work, or decoding a license. Unsuitable utilization of the copy of a digital work, an alteration, etc. can be prevented and controlled by preparing the organization in which such a monitor is possible.

[0061] In this case, the accounting system which checks payment of a utilization tariff is combinable (claim 2). For example, what is necessary is to ask a user for payment of a utilization tariff, and just to deliver a license, after checking payment when an access processing vicarious execution pin center, large (DRC) judges with the authorization information over the utilization equipment of a digital work not being registered as a result of decode of a license. Moreover, when a user does not pay to a payment demand, it is good to send warning to a user (claim 3).

[0062] It becomes possible and is convenient to be able to add the license published newly so that the content of the old license can also be deciphered (for the account of the average to be included), to retroact and to investigate the utilization hysteresis of a digital work in this case, (claim 4). However, degradation of the quality (image quality, tone quality, etc.) of a work will progress at every addition of a license new in this case. In order to prevent this quality degradation, it is good to adopt the method which erases an old license and is rewritten to a new license (claim 5).

[0063] According to invention of claim 6, the 2nd object of this invention is attained. That is, an encoder is formed in a user's digital work record regenerative apparatus, and it investigates whether it is finishing [an access processing vicarious execution pin center, large / utilization consent] using the work identification code which this encoder outputs, and the identification code of the digital work record regenerative apparatus which a user uses, and when newly performing utilization authorization, it is made to publish a license.

[0064] In this case, combining an accounting system, payment of a utilization tariff can be constituted so that a license may be published to the digital work record regenerative apparatus of a user new as conditions (claim 7). According to invention of claim 8, the concrete utilization monitoring system which combined this accounting system is obtained.

[0065] A user's digital work record regenerative apparatus can be constituted from computers (a personal computer, PC, etc.), and can connect an access vicarious execution processing center (DRC) for two or more users' computer in this case in an information network (computer network) (claim 9). An information network can be made into the Internet (claim 10).

[0066] Two or more access processing vicarious execution pin center, larges can be prepared, and can connect these in an information network (claim 11). In this case, transfer of the digital work between different access processing vicarious execution pin center, larges can become easy, the commercial scene of a digital work can be expanded, and that negotiation can be promoted further. Two or more access processing vicarious execution pin center, larges are good to prepare one at a time for every different

area (claim 12). It is because it becomes easy to carry out management for every area.

[0067] Moreover, it is appropriate for two or more access processing vicarious execution pin center,large to divide the function of the hierarchy of each hierarchy part opium poppy because of smooth management of the whole system. For example, a hierarchy division is carried out in one generalization access processing vicarious execution pin center,large, two or more local access processing vicarious execution pin center,large, and the end access processing vicarious execution pin center,large (claim 13). In this case, every one local access processing vicarious execution pin center,large is good to prepare for every country (claim width 14). And if it is surely made to carry out through a generalization access processing vicarious execution pin center,large, management will be unified and a smooth negotiation and order maintenance will become easy to plan distribution of the digital work between local access processing vicarious execution pin center,large, and accounting. Moreover, if it prepares for every country, management and accounting of the work for every country will become easy to carry out every one local access processing vicarious execution pin center,large (claim 15).

[0068] According to invention of claim 16, the recording device which CD-ROM etc. dissociates and records a work with a license on a movable record medium is obtained. According to invention of claim 17, since it prevents from reproducing the digital work which added the license published to the specific user with the regenerative apparatus of users other than this specific user, unjust utilization can be prevented certainly.

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TECHNICAL PROBLEM

[The trouble of a Prior art] However, in recent years, it enabled the general individual user, the small-scale small-scale corporation, body, etc., etc. to purchase easily fabrication tool software, such as a commercial personal computer (PC) and an encoder. For this reason, it became possible to perform conventionally the contents fabrication (digitization, duplicate-izing) which the special enterprise of software industry was performing by spending a technique and a fund in an individual user, or a small-scale corporation and a body.

[0007] Thus, it is not infringed and it cannot take a legal action as an illegal act that an individual holds digital technique and uses for his convenience at the conventional Copyright Act. Moreover, considering future development of digital technique, it is not appropriate to forbid such all acts.

[0008] For this reason, for rightful claimant protection of the digital media age, it is necessary to found a new access protection system. Then, an applicant proposes the following new systems (here, it is called digital transfer rights). That is, this new system makes possible what it attests independently to every [for which a user uses that a user uses ** digital work] utilization equipments (a utilization terminal, record regenerative apparatus, etc.), a utilization license is delivered for every utilization equipment of a user, and the dues which collected those dues (utilization tariff) directly from a carrier beam user's utilization equipment, and did ** collection of handing out of ** utilization license are distributed for to a rightful claimant.

[0009]

[Objects of the Invention] It sets it as the 1st object that it offers the utilization monitor approach of the digital work which enables the proper and smooth negotiation of a digital work as this invention is made in view of such a situation and can supervise whether the digital work which the user uses in the aforementioned new system is a carrier beam thing about handing out of a utilization license.

[0010] Moreover, in order to enforce this approach, it sets it as the 2nd object to offer the utilization monitoring system used directly. It sets it as the 3rd and 4th objects, respectively to offer the digital work recording apparatus which furthermore constitutes this utilization monitoring system, and a digital work regenerative apparatus.

[0011]

[Elements of the Invention] According to this invention, said 1st object is (a). The digital work is registered into the database for access registration by identification code, and it is; (b). An access processing vicarious execution pin center, large By receiving the identification code of the utilization equipment which the identification code and the user of a digital work whom a user uses use It is the application of utilization consent Reception opium poppy; (c) An access processing vicarious execution pin center, large collates with said database for access registration the identification code of the digital work which utilization equipment uses based on the application of this utilization consent, and the identification code of utilization equipment. The license which contains the identification code of this utilization equipment in carrying out utilization authorization is published, and it is; (d). Utilization equipment this license to a digital work by digital watermarking It is attained more by the utilization monitor approach of the digital work characterized by having the process of (a) - more than; which adds

and uses a digital work with this license (d).

[0012] In this case, an access processing vicarious execution pin center,large delivers a license, after checking that tariff payment is carried out from utilization equipment, when the identification code of utilization equipment is not registered to the digital work. Moreover, when this tariff payment is not made, it is good to send out warning to this user. Although a postscript or the account of the average of the decipherment of the license published whenever utilization equipment changes to a digital work as an approach of adding a license can be made respectively possible, in order not to degrade the quality (image quality and tone quality) of a work, the approach of rewriting an old license with a new license is good.

[0013] The 2nd object of this invention is prepared in the access registration database and; user's digital work record regenerative apparatus which register the digital work record regenerative apparatus which a digital work and its user use by identification code. The utilization consent application form section which sends out the identification code of the digital work used with said digital work record regenerative apparatus, and the identification code of said digital work record regenerative apparatus, The license adjunct which adds the license which contains the identification code of said digital work record regenerative apparatus in a digital work based on the license handing out command which the after-mentioned access processing vicarious execution pin center,large outputs by digital watermarking, The user side encoder which it has; With the application reception server which collates with said access registration database the identification code of the digital work used with said digital work record regenerative apparatus based on the identification code which said utilization consent application form section sends out, and said digital work record regenerative apparatus When carrying out utilization consent, it is attained more by the utilization monitoring system of the digital work characterized by having the access processing vicarious execution pin center,large which has the license issuance server which delivers the license containing the identification code of this digital work record regenerative apparatus to said license adjunct, and;

[0014] It is good that an accounting system is formed in this utilization monitoring system, and it is contingent [on payment of a utilization tariff] to handing out of a new license. In this case, the payment processing section is prepared in an encoder, an accounting server is formed in an access processing vicarious execution pin center,large, and an accounting database is formed further. And an application reception server does this application demand to the payment processing section, when a user's identification code is not registered to the digital work with an application, and the payment processing section pays a utilization tariff to an accounting system while issuing this application to an accounting server. Then, based on the license handing out command by which, as for an accounting server, delivery and this license issuance server send a handing out command to a user at a license issuance server, a license adjunct adds a license to a digital work. In this case, a processing result is stored in an accounting database or an access registration database.

[0015] A user's digital work record regenerative apparatus can be formed by computer (a personal computer, PC), and this computer can be connected to an access processing vicarious execution pin center,large by information networks (computer network), such as the Internet and WWW. Thus, when many users and an access processing vicarious execution pin center,large are connected in an information network, an access processing vicarious execution pin center,large can supervise utilization of the digital work to which different identification code from utilization and the user of the digital work to which a license is not given was given through an information network.

[0016] For example, the source of the digital work used by a user's homepage using well-known search engine software etc. can be investigated, and the existence of a proper license can be supervised. And to utilization of an unsuitable digital work, warning can be sent to a user through this information network.

[0017] Two or more access processing vicarious execution pin center,larges of each other may be connected in information networks, such as the Internet. In this case, a digital work can be circulated between access processing vicarious execution pin center,larges, and it becomes possible to extend a market further. For example, by [of a country etc.] preparing this for every fixed area, a digital work can be freely circulated over the wall of the border among different countries. In this case, processing of

the accounting in an area in that area is enabled as a principle.

[0018] Two or more access vicarious execution pin center, large are good to carry out a hierarchy division. For example, it divides into one generalization access processing vicarious execution pin center, large of the maximum upper layer, two or more medium-rise local access processing vicarious execution pin center, large, and the end access processing vicarious execution pin center, large of the lowest layer. In this case, every one local access processing vicarious execution every country pin center, large is prepared, if accounting in each country is performed in each access processing vicarious execution pin center, large and it is made to perform distribution of the digital work between different countries, and accounting through a generalization access processing vicarious execution pin center, large, it will become easy to aim at a smooth negotiation and order maintenance of a digital work, and the accounting between different currency will become easy.

[0019] The 3rd object of this invention is a digital work recording device used for the utilization monitoring system of the above mentioned digital work, and is attained more by the digital work recording device characterized by having the user side encoder which has the utilization consent application form section and a license adjunct, and the Records Department which records the digital work which attached the license by digital watermarking on a disengageable storage.

[0020] The playback section which the 4th object of this invention is a digital work regenerative apparatus used with the aforementioned digital work recording apparatus, and reads the content recorded on the storage, The identification code of said digital work recording device is memorized beforehand. When the license given to the digital work read in said playback section is the identification code and the inequality of said digital work recording apparatus, it is attained more by the digital work regenerative apparatus characterized by having the protector which forbids the output of the digital work read in said playback section.

[0021]

[Embodiment of the Invention] Drawing showing the embodiment from which drawing 1 serves as a basic configuration of this invention, drawing showing the embodiment to which drawing 2 similarly added the accounting system, drawing showing the embodiment to which drawing 3 added the unjust utilization warning system by the information network, and drawing 4 are drawings showing other embodiments which used the digital work recording device and the regenerative apparatus as another object.

[0022] In drawing 1, a sign 10 is the copyright person (assignment of access is included for a carrier beam person from a creator or a creator) of the digital work 12, and the copyright person 10 registers this digital work 12 into the access registration database (DB) 14 (drawing 1 and step [of 2] **).

[0023] Identification code is given to all the digital works 12, respectively, and the digital work 12 and its identification code are always united, and are transmitted. When registering this digital work 12 into the access registration database 12, the copyright person's 10 identification code (ID) is registered with that identification code.

[0024] It has the digital work record regenerative apparatus 16 which consists of a computer, Person (the user, client) A, i.e., the user, who wishes utilization of this digital work 12, and he copies the digital work 12 to his own equipment 16 through storages, such as information networks, such as the Internet, and CD-ROM, DVD, etc. (step **). (copy)

[0025] User's A record regenerative apparatus 16 contains the encoder 18 which consisted of software. The record regenerative apparatus 16 is connected to the access processing vicarious execution pin center, large (Digital Rights Center, DRC) 20 through information networks, such as the Internet. The software of an encoder 18 may be supplied through an information network from DRC20. This software may be recorded on record media, such as CD-ROM prepared separately, and may be supplied to User A.

[0026] The user A who wishes utilization of the digital work 12 applies for utilization authorization to DRC20 using an encoder 18 (step **). This application is made by sending identification code ID (A) of the identification code of the digital work 12 and User A who use to DRC20. If DRC20 receives this authorization application, it will collate with the data of the access registration database 14, and whether

this user's A being registered to this digital work and User A will check whether utilization authorization is already obtained (step **).

[0027] If utilization authorization is already obtained, DRC20 will order it handing out of a license to User A (step **). The command of this license handing out is limited to User A, it is taken out, and User's A identification code ID (A) is contained in the license 22. An encoder 18 adds a license 22 to the digital work 12 by digital watermarking (digital watermark) in response to this license handing out command (step **). Therefore, the digital work 12 which User A uses after that is used where this license 22 is always attached.

[0028] About digital watermarking used here, various approaches are well-known. For example, to voice data, the approach using the Fourier transform, the approach using wavelet transform, etc. are proposed. Moreover, to the static image, the approach using [the approach using wavelet transform or a JPEG (Joint Photographic Experts Group) picture compression method] an MPEG (Motion Picture Image Coding Experts Group) compression method etc. is proposed to the dynamic image. Since it becomes complicated to explain these approaches to a detail, the explanation is omitted and mentions only the reference name here. (1) the quality evaluation of Kineo Matsui "image depths code" Morikita Shuppan, 1993, (2) Yuichi Ishizuka, Yasuyuki Sakai, and the digital-watermarking technique based on Koichi Sakurai "frequency conversion -- being related --" Institute of Electronics, Information and Communication Engineers, Shingaku Giho, 1997-07, (3) Keiichi Iwamura, Koichi Sakurai, the Hideki Imai "proposal of blind digital watermarking" Institute of Electronics, Information and Communication Engineers, Shingaku Giho, and 1997-09.

[0029] Other users B have record regenerative-apparatus 16B like User A, and encoder 18B containing User's B identification code ID (B) is built in here. If User B copies the digital work 12 from User A (copy), it will be incorporated by record regenerative-apparatus 16B as digital work 12B (step **). Encoder ID(B)18B makes a delivery authorization application for identification code ID (B) of the identification code of this digital work 12B, and User B to DRC20 (step **). In DRC20, to this digital work 12B, User B collates with the data of the access registration database 14 whether utilization authorization is carried out, and checks it (step **). If utilization authorization is registered as a result, DRC20 will send the handing out command of license 22B to User B (step **).

[0030] Encoder 18B adds license 22B to User B to digital work 12B by digital watermarking in response to this handing out command (step (10)). In addition, since User's A license 22 is already added to digital work 12B by digital watermarking by step ** at this time, when adding license 22B at this step (10), a license 22 can be rewritten to license 22B.

[0031] Thus, if extent of degradation of the information over the original digital work 12 can be kept constant when rewriting, there is no possibility of causing degradation of the image quality by repeating a copy or tone quality, and it is desirable. Moreover, license 22B is convenient in order to be able to know the hysteresis of a copy and to grasp the utilization situation of the digital work 12 by it being also recordable in piles in order, and retroacting to reverse and reading licenses 22B and 22 in order in this case, without erasing the old license 22.

[0032] Although, as for an encoder 18, a user shall install that software in his own record regenerative apparatus 16, the encoder 18 is beforehand installed before marketing of the record regenerative apparatus 16, or can be made to build in beforehand by nonvolatile memory in this embodiment. This encoder 18 is beforehand installed in all the record regenerative apparatus 16 marketed especially, and a user can prevent from demounting this encoder 18. In this case, the monitoring function by the unauthorized use monitoring system (drawing 3) which carries out a postscript can be raised.

[0033]

[Other embodiments] Next, the example of a configuration which added the accounting system to the basic configuration of said drawing 1 is explained based on drawing 2. In this embodiment, the encoder 18 used for User's A record regenerative apparatus 16 has the application form section 100, the payment processing section 102, and the license adjunct 104. In addition, the application form section 100 and the license adjunct 104 are the same as that with which the encoder 18 in the embodiment explained by said drawing 1 is equipped.

[0034] Moreover, in the embodiment of this drawing 2, it has the application reception server 106, the accounting server 108, and the license issuance server 110 in DRC20. In addition, the application reception server 106 and the license issuance server 110 are the same as that with which DRC20 in the embodiment of said drawing 1 is equipped. Furthermore in the embodiment of this drawing 2, it has the accounting database 114 which forms the access information management database 112 with the access registration database 14. Information, such as the payment amount of money to the accounting information 12, for example, the used digital work, for every user, a due date, and a method of payment, is recorded on this accounting database 114.

[0035] 116 is an accounting system. This accounting system 116 can adopt the well-known settlement-of-accounts approach of versatility besides cybermoney settlement of accounts, ATM card settlement of accounts, and ISP (Internet Service Provider) settlement of accounts [the approach ISP performs price recovery using the connection ID of ISP (identification code)], and the method which becomes usable in the future.

[0036] If an author 10 registers the digital work 12 into the access registration DB14 (step [of drawing 2] **) and User A copies this digital work 12 (step [of drawing 2] **), the application form section 100 of an encoder 18 will take out a utilization authorization application with this embodiment to the application reception server 106 of DRC20 (step **). It checks whether this application reception server 106 has registered utilization consent of as opposed to [with reference to the access registration DB14] this digital work 12 in this user A (step **). The actuation so far is completely the same as the embodiment of said drawing 1.

[0037] In the embodiment of drawing 2, when utilization consent has not been registered in this step ** (it does not approve), in order that the application reception server 106 may make User A pay a utilization tariff and may make a proper license add, it performs the following processings. That is, it is required that this application for asking for issuance of a proper license from the payment processing section 102 of an encoder 18 should be made (step **). Based on directions of User A, the payment processing section 102 attaches User's A identification code ID (A) to the accounting server 108, and makes this application (step **). At this time, User A pays a utilization tariff using the accounting system 116.

[0038] The accounting server 108 sends a license handing out command to the license issuance server 110 a condition [this application from User A, and tariff payment] (step **). It is added to the access registration DB14 as utilization information that the license was published to User A at this time. Moreover, the payment information on a utilization tariff is recorded on the accounting database 114.

[0039] The license issuance server 110 sends out the same handing out command as the license adjunct 104 of an encoder 18 based on a handing out command (step **). The license adjunct 104 adds the license 22 which contains User's A identification code based on this handing out command to a work 12 by digital watermarking (step **). As a result, a work 12 becomes the proper thing to which the license 22 was added, and it enables User A to use proper by itself. On the other hand, the access information management database 112 manages the utilization tariff paid by User A, and distributes the dividend to the copyright person 10 timely (step (10)).

[0040]

[Other embodiments] Drawing 3 is drawing showing other embodiments which added the system which supervises unjust utilization. In this embodiment, the access processing vicarious execution pin center, large (DRC) 20 and the monitor pin center, large 120 are connected with two or more users A, B, and C and -- by the information networks 122, such as the Internet. He shall be the user who Users A and B are users of the digital work which attached the proper license, and uses unjustly the work in which User C does not have a proper license here.

[0041] The monitor pin center, large 120 makes the information about an inaccurate user record on the unjust utilization information database 124 while sending out warning to an inaccurate user. The 1st approach this monitor pin center, large 120 discovers an inaccurate user is the case where it is notified to the monitor pin center, large 120 that DRC20 does not pay a utilization authorization application and a user does not pay a utilization tariff in spite of a carrier beam (step of drawing 3 (a)).

[0042] The 2nd approach is the case where the monitor pin center, large 120 looks for an inaccurate user through an information network 122. For example, the monitor pin center, large 120 decodes the license given to Users A, B, and C and the digital work which uses the homepage of --** for timely by the aperture and its homepage by digital watermarking. And the decoded license judges whether it is a thing to the users A and B of the work, and --. The user C using what what is un-proper with a license, or a license does not attach judges with his being an inaccurate user, and emits warning with other proper means through an information network 122 (step (b)).

[0043]

[Other embodiments] Drawing 4 shows other embodiments and divides a digital work recording device and a regenerative apparatus independently here. 130 is a recording device, can make digital information the data of digital works, such as a computer, CD (Compact Disc) recorder, and a DVD recorder, and can record them.

[0044] The encoder 132 is beforehand built into this recording device 130. This encoder 132 contains identification code ID (A) of the user A of a recording device 130. To the authorization application by User A (step **), when DRC20 outputs a license issuance command, (step **) and an encoder 132 add the license (A) to User A to a digital work by digital watermarking (step **).

[0045] A record medium (CD), for example, a compact disk, is picked out from a recording apparatus 130, and it sets in a regenerative apparatus (CD player) 134 (step **). The protector (A) 136 to User A is beforehand included in this regenerative apparatus 134. This protector (A) 136 judges whether it is the proper thing by which this license was published to User A as a result of decoding a license. As for a protector (A) 136, a license permits playback of a work, to User A if, and if it is a music work, it will enable User A to listen to the music.

[0046] 138 -- differing -- a user -- B -- a regenerative apparatus -- it is -- here -- **** -- a user -- B -- receiving -- a protector -- (-- B --) -- 140 -- beforehand -- incorporating -- having -- ****. For this reason, when CD with which User's A license was given to this regenerative apparatus 138 is set, identification code ID (B) of a protector (B) 140 serves as identification code ID (A) of the license of CD, and an inequality. At this time, a protector (B) 140 forbids playback by the regenerative apparatus 138. According to this embodiment, except a proper regenerative apparatus, it can reproduce and the digital work copied unjustly can prevent an unjust copy certainly.

[0047]

[Other embodiments] The conceptual diagram of the embodiment of others [drawing 5] and drawing 6 are drawings showing an information flow. This embodiment carries out the hierarchy division of said two or more access vicarious execution pin center, larges (DRC), and connects each other by the information network. Namely, the end access processing vicarious execution pin center, large where DRC provides a user (user) with a digital work (it is called Business DRC and B-DRC), The local access processing vicarious execution pin center, large of the high order which generalizes two or more B-DRC (it is called Country DRC and C-DRC), It is divided into three hierarchies with the top generalization access processing vicarious execution pin center, large (it is called World Wide DRC, WW-DRC, and wwDRC) which generalizes two or more C-DRC, and these are connected by the Internet etc.

[0048] B-DRC is a distribution management server equivalent to the dealer of a digital work, and may have two sorts of a large store and a small store. A large store has an original accounting system, and a small store is applied to the bottom of management of this large store or C-DRC, and is a satellite shop. This B-DRC performs the next processing among users (user) with the function of said drawing 1 and DRC20 explained by 2. That is, they are sale registration of a digital work (contents), distribution management, license management, accounting settlement-of-accounts information management, etc. Although drawing 1, and the access registration database 14 and the accounting database 114 in 2 may be independently given to each B-DRC, the thing of upper C-DRC may be used. This B-DRC sends the information about the informational transmission and reception performed among this user to upper C-DRC.

[0049] Every one C-DRC is prepared for every fixed area, for example, a country, and carries out generalization management of all B-DRC in each country. This C-DRC has the access registration

database 14 (drawing 1 R> 1 two) or the access information management database 112 (drawing 2), and an accounting system (116 drawing 2), and performs all processings and managements that were shown in drawing 1 including registration of the digital work in each country (contents), and 2. That is, in each country, one C-DRC manages all digital works, and performs accounting management, management of the commission of DRC, etc. again. This C-DRC sends such management information to wwDRC of the maximum upper layer.

[0050] wwDRC generalizes and manages C-DRC which connected with two or more C-DRC, for example, it has arranged one [at a time] for every country in the world. In this case, only one wwDRC is set as the world. The country to which the country which arranges this wwDRC can carry out most smoothly [the accounting carried out to management of a digital work from the standpoint on laws, such as a convenient country, for example, copyright etc., between the country where protection of the authors (a copyright person, creator, etc.) of a digital work is the thickest, and many countries] is suitable. In addition, although C-DRC is good also for the country which has arranged this wwDRC to arrange one, you may arrange in a country without C-DRC.

[0051] wwDRC has the following three functions fundamentally. That is, they are a C-DRC function manager, an access registration switching function, and an international settlement processing facility. A C-DRC function manager is a function to perform, the data control, i.e., the access processing information management, of C-DRC, while performing a system support to C-DRC prepared for each country. For example, the distribution of a digital work performed between different C-DRC is managed. In addition, the function which is receiving registration of a digital work (contents), shifts and is registered into that C-DRC may be given to this wwDRC.

[0052] An access registration switching function is a function to transfer the access (for the access which accompanies copyrights, such as copyright and the right of reproduction copyright, to be included) about the digital work registered into C-DRC of each country (domestic registration) to C-DRC of a country which a rightful claimant wishes. This transfer enables it to protect the access about a digital work by the law of the country of a new address. Moreover, by this access registration switching function, setting out of the access about a digital work is attained between C-DRC of a different country.

[0053] An international settlement processing facility is a function which manages the information about tariffs, such as migration of the digital work between international, and accounting accompanying setting out and a transfer of access, a charge of a license, a commission, and is settled between international.

[0054] Thus, it becomes possible by preparing C-DRC for each country focusing on wwDRC, and constituting in each country, so that B-DRC may sell a digital work to a user (supply) to position wwDRC as exchange of the digital work between international. That is, a digital work (contents, i.e., goods) can be wholesaled to C-DRC in the world, and B-DRC through wwDRC. Moreover, it becomes possible to circulate a digital work all over the world using the common interface managed by wwDRC, and management becomes simple. Furthermore, an author (creator) can gain the market of worldwide magnitude through an information network (Internet), and it becomes easy to spread a digital work through a world commercial scene.

[0055] Next, the content of processing after a digital work (contents) is registered based on drawing 6 until it transfers to a user (user) is explained. An author (creator) performs author registration (pub RISSHA registration) from his own computer terminal (creator terminal) first. That is, an author (creator) registers an author name (pub RISSHA name) and ID (pub RISSHA ID) which is identification code to C-DRC (step [of drawing 6] **).

[0056] An author performs temporary registration of an aperture and a work (contents) for the file for contents registration using a browser (viewer) from his own terminal (creator terminal) (step [of drawing 6 R> 6] **). For example, in the case of a music work, a work name, the content of a work (format), a player, performance time amount, copyright information, the viewing-and-listening range, a price (for example, US dollar display), etc. are inputted. C-DRC will publish, if this temporary registration is received (step [of drawing 6] **), the identification code, i.e., the content ID, to this work (contents) This content ID is taken as HTML (Hyper Text Makeup Language).

[0057] An author does high grade registry of his own digital work to C-DRC in response to the content ID in a creator terminal (step [of drawing 6] **). In the case of this high grade registry, various information (a pub RISSHA name, pub RISSHA ID, etc.), for example, the identification marking of a work, is given to a digital work by digital watermarking (digital watermark). Moreover, input, such as a work name inputted by step **, is attached by the proper approach. In addition, it is also possible to encipher and distribute a digital work and the information, i.e., the encoding information, and encryption information for enciphering in this case are given to the head and the last of data as control information of a header or a trailer. Thus, the registration procedure shown in step [of drawing 6] ** - ** is equivalent to drawing 1 and the registration procedure of step ** in 2.

[0058] In C-DRC, if registration (step ** - ** of drawing 6 R> 6) of a digital work is received, this digital work will be encapsulated (enciphering), it will register with the access registration database 14 (drawing 1 , 2) as transmitting master information, and distribution (distribution) to a user (user) will be started (step [of drawing 6] **). In addition, in this invention, you may make it distribute without encapsulating (encryption), and such a thing is included. Moreover, C-DRC sends this transmitting master information also to wwDRC, and registers it here (step [of drawing 6] **).

[0059] In B-DRC, the digital content (work) distributed from C-DRC is sold (step [of drawing 6] **). Namely, a user (user) views and listens to the work (at this event, it is a work non-granted a permission) supplied from B-DRC, and when you wish to purchase, he should just receive handing out of a license according to said drawing 1 and the procedure shown in 2 (step [of drawing 6] **). In addition, when the digital work is encapsulated (encryption), a user tries listening according to the audition range (audition time amount, count of an audition, etc.) inputted by step ** of drawing 6 , and in wishing to purchase, it publishes to a user a key (decode key) for C-DRC to thaw a capsule under predetermined conditions, such as tariff payment, based on the authorization application which a user issues.

[Translation done.]

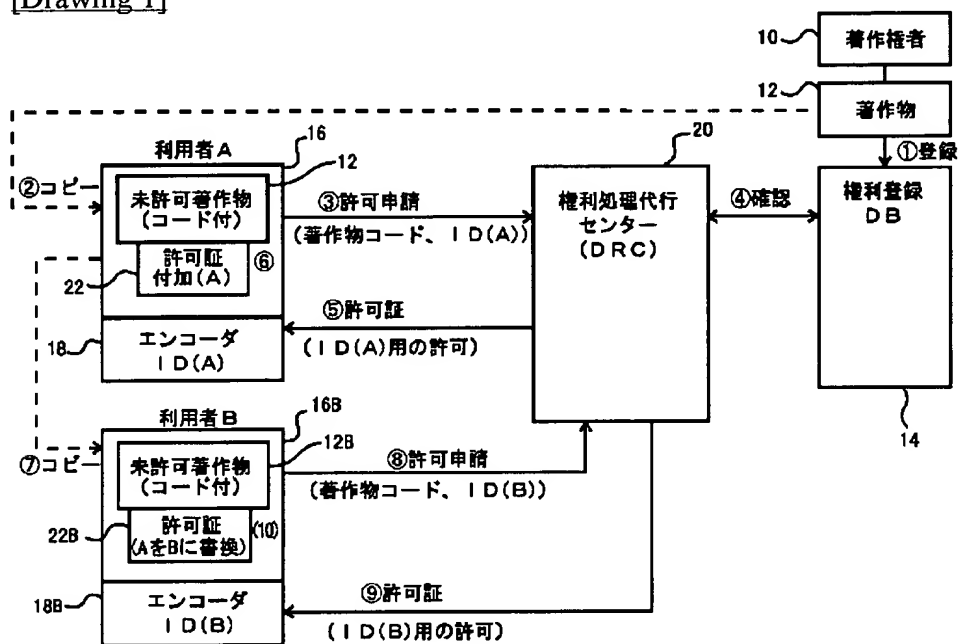
* NOTICES *

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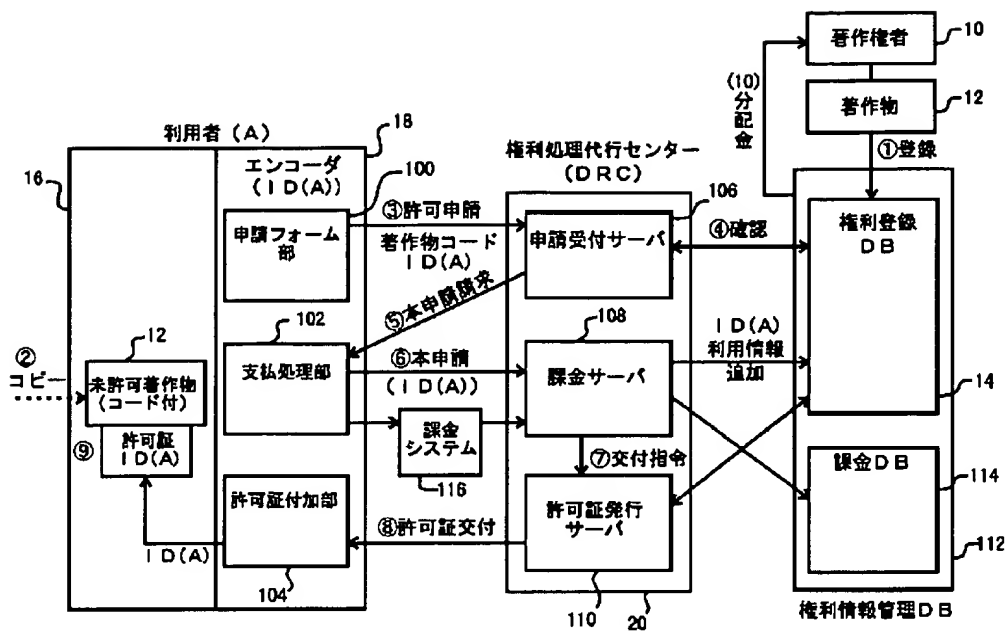
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

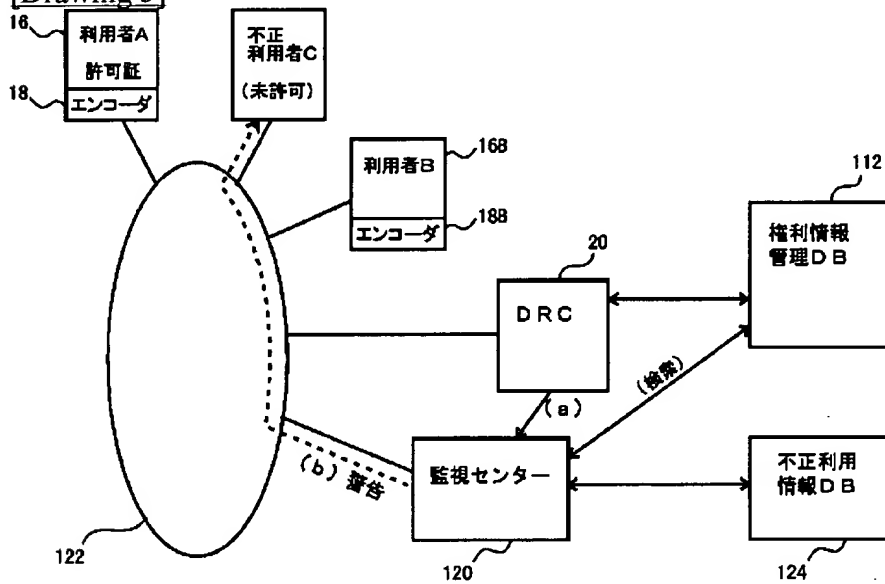
[Drawing 1]



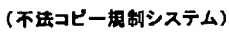
[Drawing 2]



[Drawing 3]



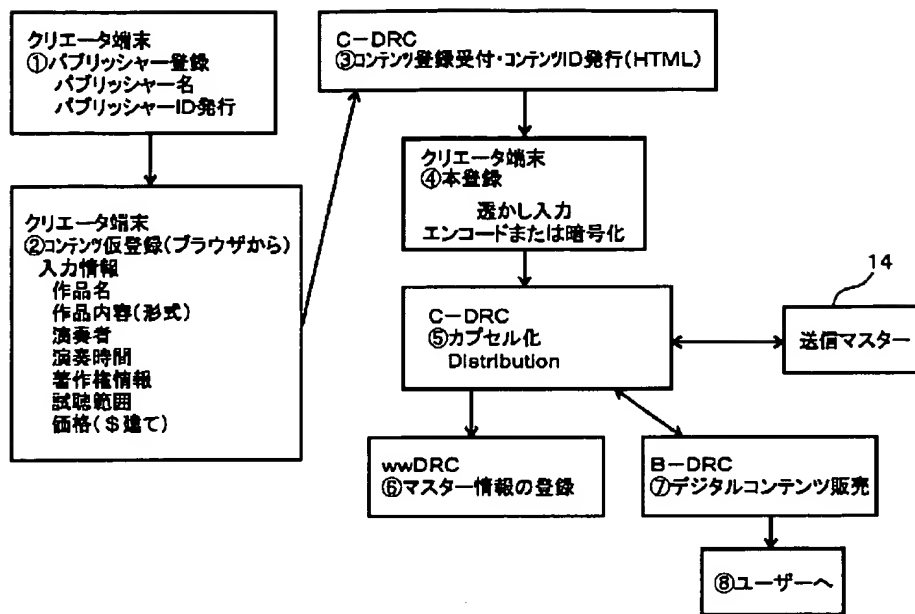
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]